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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,193

06/21/2007

Jurgen Gaydoul

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36290

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07/29/2009

DUANE MORRIS LLP - DC

505 9th Street

Suite 1000

WASHINGTON, DC 20004-2166

EXAMINER

KOEHLER, CHRISTOPHER M

ART UNIT

PAPER NUMBER

3726

MAIL DATE

DELIVERY MODE

07/20/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/590,193

**Applicant(s)**

GAYDOUL, JURGEN

**Examiner**

Christopher M. Koehler

**Art Unit**

3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 April 2009.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-18 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 22 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/5508)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. Figures 1-3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (see applicants' brief description of drawings). See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5, 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Gaydoul (US Patent No. 5,502,881).

#### Claim 1:

Gaydoul teaches an apparatus for descaling hot rolled stock (7, figure 3, abstract), being moved (F) with respect to the apparatus (8), by spraying it with high pressure water (abstract), comprising at least one row of nozzle heads (20) sweeping

across the width of the rolled stock with a plurality of nozzle heads (figure 3), each nozzle head being motor-driven in rotation about an axis of rotation (A) (col. 4, lines 1-9) substantially perpendicular to the surface of the rolled stock (figure 3) and comprising at least two nozzles (21, figure 4) which are disposed eccentrically (figure 7) with respect to the axis of rotation (A), the nozzles of each nozzle head being arranged as closely as structurally possible to the circumference of the nozzle head (figure 7), whereby a spray pattern (figures 6 and 8) is created on the surface of the rolled stock in a way to touch or overlap (figure 8) the spray pattern of the adjacent nozzle head in the row of nozzle heads, and the nozzles being arranged in the nozzle head radially inclined outwardly at an angle of inclination ( $\alpha$ ) in the range of  $0^\circ$   $0\sim 20^\circ$  (figure 9, angle alpha, col. 3, lines 60-67), and inclined in circumferential direction (f,f) of the rotation of the nozzle head (see figure 4 where it is clearly illustrated that the nozzle is inclined so as to spray at an angle to the left of the axis of the nozzle head and col. 5, lines 4 and 5).

Claim 2:

Gaydoul teaches that the angle of radial inclination (alpha) is in the range of 0 to 30 degrees (col. 3, lines 60-67) and in one specific embodiment is 15 degrees (col. 5, lines 63-67)

Claims 3 and 9:

Gaydoul teaches that the angle of inclination of the nozzles in circumferential direction lies in an angular range of 0 to 30 degrees and in at least one specific embodiment is 15 degrees (col. 5, lines 4 and 5).

Claims 5 and 10:

Gaydoul teaches that the jet opening angle of the jet exiting from the nozzles is 0 to 15 degrees (figure 5).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6-13 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaydoul.

**Claims 6, 7, 17 and 18:**

Gaydoul teaches two embodiments having 4 and 2 nozzles mounted evenly distributed on the nozzle head (figures 4, 10 and 11) but does not explicitly teach that the nozzle head has 6 or 8 nozzles evenly distributed on the nozzle head. The disclosure implies that the number of nozzles is selected based on the characteristics of the material to be sprayed. At the time of the invention it would have been an obvious matter of design choice to one of ordinary skill, to have used 6 or 8 nozzles because applicant has not disclosed that the additional nozzles provide an advantage or solve a stated problem not met by 2 or 4 nozzles. One of ordinary skill in the art, furthermore, would have expected applicants invention to perform equally well with either the number of nozzles taught by Gaydoul or the claimed number of nozzles because both perform the same function of removing scale equally well. Therefore, it would have been an

obvious matter of design choice to modify Gaydoul to obtain the invention specified in claims 6, 7, 17 and 18.

Claim 8:

Gaydoul teaches an apparatus for descaling hot rolled stock (7, figure 3, abstract), being moved (F) with respect to the apparatus (8), by spraying it with high pressure water (abstract), comprising at least one row of nozzle heads (20) sweeping across the width of the rolled stock with a plurality of nozzle heads (figure 3), each nozzle head being motor-driven in rotation about an axis of rotation (A) (col. 4, lines 1-9) substantially perpendicular to the surface of the rolled stock (figure 3) and comprising at least two nozzles (21, figure 4) which are disposed eccentrically (figure 7) with respect to the axis of rotation (A), the nozzles of each nozzle head being arranged as closely as structurally possible to the circumference of the nozzle head (figure 7), whereby a spray pattern (figures 6 and 8) is created on the surface of the rolled stock in a way to touch or overlap (figure 8) the spray pattern of the adjacent nozzle head in the row of nozzle heads, and the nozzles being arranged in the nozzle head radially inclined outwardly at an angle of inclination ( $\alpha$ ) in the range of  $0^\circ$ – $20^\circ$  (figure 9, angle alpha, col. 3, lines 60-67), and inclined in circumferential direction (f,f) of the rotation of the nozzle head (see figure 4 where it is clearly illustrated that the nozzle is inclined so as to spray at an angle to the left of the axis of the nozzle head and col. 5, lines 4 and 5). Gaydoul does not explicitly teach that pairs or groups of nozzle heads are adapted to be switched off or on in correspondence with different widths of rolled stock.

The examiner takes official notice that it is well known in the art of descaling apparatuses to descale varying widths of rolled stock and that in doing so nozzles are switched on or off depending on the width of the rolled stock being processed. It would have been obvious to one of ordinary skill in the art at the time of the invention to have switched on nozzles that are over the rolled stock and switch off nozzles that have no rolled stock between them for several reasons including the conservation of the descaling fluid and the prevention of undue wear on the nozzle heads caused by opposing nozzle heads spraying high pressure fluid against each other with no rolled stock therebetween.

Claims 13 and 16:

See rejections of claims 9 and 10 above.

Claims 11, 12 and 15:

See rejections of claims 2, 3 and 5 above.

6. Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaydoul in view of Hiroshi et al. (JP 11-216513).

Claims 4 and 14:

Gaydoul teaches the invention claimed but does not explicitly teach that adjacent nozzle heads in the row of nozzle heads are driven to rotate in opposite directions with respect to one another.

Hiroshi teaches steel descaling nozzle heads and nozzles wherein the nozzle heads (2) are placed adjacent to one another (figures a and b) and the row of nozzle heads are driven to rotate in opposite directions with respect to one another (figure b).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have applied the rotation teaching of Hiroshi to the apparatus of Gaydoul since the counter rotation of adjacent heads results in a more efficient and uniform descaling between the heads by preventing the interference of high pressure water between the heads (see Hiroshi "Problem to be Solved").

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Koehler whose telephone number is (571)272-3560. The examiner can normally be reached on Mon.-Fri. 7:30A-4:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a



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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jermie E Cozart/

Primary Examiner, Art Unit 3726

/C. M. K./

Examiner, Art Unit 3726